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Reviews - Writings in Accounting

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REVIEWS

Writings in Accounting

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"TOWARD AN INPUT-ORIENTED CHART OF ACCOUNTS," John W. Wagner, MANAGEMENT SERVICES, Volume 5, No. 5, September-October 1968.

Dr. Wagner's thesis is that the electronic computer makes possible an entire new approach to the chart of accounts in which a whole series of necessary outputs can be derived from one input. The author states that in an output-oriented system the questions to be answered by the system are formulated in advance and the data (or input) are then limited to those which will produce the specific type of output necessary to answer the questions that were formulated earlier.

In an input-oriented system there is much less concern with an advance definition of the specific questions to be answered. The concern is rather that as many different types of data as possible be integrated into the system.

"Input" is defined as the various data that are initially introduced into the system regardless of the level of abstraction at which it is chosen to make them an input. An input might be total sales of a company. A lower level of abstraction would be sales by departments and a still lower level would be sales by product line.

"Output" is defined as the information that is produced by combining the given inputs in some way. The level of abstraction in the output can never be lower than the particular input from which it is derived. It is desirable to maintain accounts at the lowest level of abstraction possible whether they are output- or input-oriented.

In coding transactions, the author points out that in general the more coding specifically relates to the particulars of the given transactions, the more input-oriented the chart of accounts will be. Conversely, the more the coding specifically relates to the information it is thought desirable to have the system produce, the more output-oriented the chart of accounts will be.

The remainder of the article is concerned with the designing and use of an input system. The example presented is that of a retail organization with three locations and three terms of sales, sales for cash, sales on 30 day open accounts, and sales on 90 day installment accounts. With three locations and three terms of sales, only nine types of sales transactions are assumed possible at the lowest level of abstraction, and the author places these in what he calls a transactions matrix. Also since there are two types of sales for credit, six types of cash collections on accounts are possible, (2 x 3 locations) and these are placed into what is called a cash collections matrix. We now have 15 types of transactions possible at the lowest level of abstraction, and for cash, accounts receivable and sales the author presents an input chart of accounts consisting of 22 account descriptions.

A matrix may be defined as a rectangular array of items arranged in rows or columns. It has mn items arranged in m rows and n columns, it is of the order m by n. Since there are nine items in the transactions matrix, they are arranged in three rows and three columns. The six items in the cash collections matrix are arranged in two rows and three columns. The totals of the 15 transactions can be combined to answer 15 factorial questions. Fifteen factorial is computed by multiplying 15 x 14 x 13 and so on to x 1. This comes out to a little more than 1 trillion answers and with an input chart of accounts, answers to any of these 1 trillion questions can be obtained as soon as the need arises without going through any long, involved special analysis.

In explaining how the system works, Dr. Wagner states that in order to get the current accounts receivable balance, for example, the computer would be asked to add certain accounts and subtract certain others, and he points out that the computer system does not need to maintain separate double entry accounts with balancing debits and credits.

It seems important to this reviewer to state that even though the computer, as Dr. Wagner says, does not become confused when faced with numerous highly detailed instructions about each input account, the accountant in charge of the computer system must keep the rules of debit and credit clearly in mind. In

arriving at the current balance of accounts receivable in a system such as this, the accountant must know which items are debits and which are credits in order to be able to tell the computer which ones to add and which ones to subtract if the computer is going to produce the correct answer.

Since every transaction has at least two parts and involves at least two accounts, the double entry system is a means of recording economic facts and is therefore more than a system of checks and balances. Whether an increase in accounts receivable is called a debit or is designated as an instruction to the computer to add to account 2, for example, does not matter. What does matter is that the economic fact remains and must be correctly recognized by the accountant.

Dr. Wagner concludes the article by pointing out that with the system outlined in the article various statistical data can be obtained such as ratios of accounts or combinations of accounts to various totals, etc. thus making the system an information system in every sense of the term.

The reader may also be interested to know that the January-February issue of "Management Services" contains a letter from Mr. Gerald M. Levinson, CPA, in which he has some reservations about the system described by Dr. Wagner, but believes that it is technically possible. Dr. Wagner in a reply says that the problems involved are not too formidable. There is also a letter in the same issue of "Management Services" from Mr. E. Reece Harrill in which he states that he is in agreement with Dr. Wagner's concepts. He has designed systems similar to that described by Dr. Wagner for the Bureau of Indian Affairs, the Department of Interior, and the Civil Service Commission. These systems have been in use since July 1968.

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The number of books, magazines, and articles which we SHOULD read is seemingly endless, and the ability of the staff and the contributors of this magazine to review all of them is limited by both space and time. The following is a short list of some that have come to our attention in recent weeks and which you may wish to explore in depth:

"INITIAL PUBLIC FINANCING FOR THE SMALL AND MEDIUM SIZED BUSINESS," Robert A. Weaver, Jr. (Investment Bankers Assn. of America, 425 13th St., NW, Washington; 46 pages; $1)—a short treatment of the problems (loss of secrecy about corporate affairs, subjection to SEC regulation) and the advantages (increased capital and financial freedom—a special appeal to investors who are willing to wait a few years for capital appreciation) of "going public."

"MAN AND THE COMPUTER," John Diebold (Praeger, New York; 157 pages, $5.95)—a fairly short book by the president of an international management consulting company. For those in management it stresses the importance of accepting change—and certainly the computer stands for change in many once-accepted ways of handling business transactions.

"BLACK CAPITALISM," Theodore L. Cross (Atheneum, New York; 258 pages; $8.95)—this analysis of economics in the ghetto and the various means of combating poverty offers a 13-point program aimed at increasing the wealth of the ghetto economy.

"AUDITING & EDP," Gordon B. Davis (AICPA, New York; 344 pages; $12)—a clearly written study of the best means for the auditor to use in auditing the electronic data processing systems which are appearing in more and more clients' offices each month.

"MUCH-ABUSED GOODWILL," Abraham J. Brillhof (Barron's, April 28, 1969)—a short article which discusses clearly the differences between purchase accounting and pooling-of-interests accounting.

"VOLUNTARY DISCLOSURE IN 1968 ANNUAL REPORTS," George Hobgood (Financial Executive, August 1969)—this 6-page article depicts graphically how much informative disclosure—particularly regarding sales by product line (and even profits by product line)—is currently appearing in annual reports.

"EXTERNAL REPORTING FOR SEGMENTS OF A BUSINESS," Dr. Morton Backer and Dr. Walter B. McFarland (NAA, $2.50)—the first of NAAs Research Series in Management Reporting. This should be must reading for those who believe the companies with which they are affiliated may be faced with reporting sales, earnings, etc., by product line.

"A DICTIONARY FOR ACCOUNTANTS," Third Edition, Eric Kohler (Prentice-Hall, Englewood Cliffs, N. J.; $15.95)—a necessary tool for all accountants, particularly today when change is the order of the day.